

Application No. 10/501,092
Attorney Docket No.: 042564
Amendment Filed: May 25, 2007

REMARKS

Claims 1-6 are pending in the present application. Claims 1-6 are rejected. No new matter has been entered.

Specification Amendment

The specification has been amended on page 31, Table 2, to correct results for Example 12. Applicants will be submitting a declaration to support the amendment.

Claim Rejections - 35 U.S.C. § 102

Claims 1-6 were rejected under 35 U.S.C. § 102(b) as being anticipated by **Majima** (WO 01/092417 as evidence by U.S. Patent 6,780,482; citations to Majima below refer to the '482 patent). Favorable reconsideration is requested.

The present invention provides a polyester film having good formability and is free of whitening (that is, when the film is heat-treated at around melting point or not less than the melting point, whitening does not occur). Specifically, for example, the present inventors conducted intensive studies in an attempt to provide a polyester film having good formability that permits the film to follow expansion of the metal plate without cracking or detaching when a can is made using a film-laminated metal plate wherein the film is laminated on the metal plate, and to provide a superior design free from whitening during lamination. (Specification, page 2, paragraph 2 to page 4, paragraph 1.)

A film having a half value width of crystallization peak of not more than 0.25 during temperature decrease of the film as measured by a differential scanning calorimeter (DSC) (=a

film having a peak temperature (T_c2) of a recrystallization peak of not less than 180°C) shows high crystallization rate during a cooling process for temperature decrease from the melting point, and is not whitened easily. (Specification, page 9, paragraph 2; *e.g.*, Examples 1 – 11.) In the case of a film made of a single crystalline polyester as in Comparative Example 6, the half value width of a recrystallization peak during a temperature decrease is not more than 0.25. While the above-mentioned whitening does not occur, good formability (can making property when the film is for metal plate lamination) cannot be achieved.

The invention described in Majima is aimed at suppression of whitening of a film. Majima refers to suppression of whitening of a film when a laminated metal plate is subjected to a retort treatment wherein the heating temperature is 125°C, (col. 3, lines 5-27; col. 15, lines 30-60), and is different from the suppression of whitening that occurs in the present invention when a film is laminated on a metal plate by melting and cooling the film, namely, whitening that occurs when a film is heated to a high temperature of 280°C and then cooled (present specification, page 3, paragraph 3; page 4, paragraph 1; table 2). In addition, Majima does not describe recrystallization peak and half value width of a polyester film during temperature decrease.

Applicants respectfully submit that Majima does not disclose, either explicitly or inherently, a film showing “a half value width of recrystallization peak obtained by a differential scanning calorimeter (DSC) by lowering temperature of not more than 0.25” as recited in claim 1.

The Office Action takes the position that Majima discloses a film meeting the composition requirements and also using the same process as disclosed in the present application, and thus, Majima inherently discloses a half value width of recrystallization peak. (Office Action, page 3.)

As pointed out in the Office Action, Majima describes a method of melting each resin of PET and PBT in individual extruders and mixing them. (Col. 8, lines 53-64.) However, In a method wherein two kinds of polyesters are melted in individual extruders and mixed therein, even if an extrusion temperature in the final extruder (third extruder) of 260°C is used as suggested by example 13 of Majima, the half value width of recrystallization peak depends on additional factors such as equipment conditions, *e.g.*, L/D, compression ratio, L/D of compression part.

The present specification discloses that a film showing the requisite half value width of recrystallization peak can be produced by forming a film wherein two kinds of polyesters are dispersed in a comparatively large crystal phase dispersion state ("crude mixture"). (Specification, page 10, line 24 to page 12, line 31.) Majima does not disclose process conditions for obtaining a film wherein two kinds of polyesters are present in a dispersion state of a "crude mixture" as described in the present specification.

Thus, the film in Majima does not inherently have the requisite half value width of recrystallization peak as recited in claim 1.

Applicants also note that Majima discloses, in the examples, dry blending, melting and mixing two kinds of polyesters in a single extruder. In example 13 of Majima, a film is formed by extruding two kinds of polyesters at an extrusion temperature of 260°C. The resin temperature in the extruder is not more than 265°C and the temperature from the cylinder part to T-die may be set to a temperature not exceeding 275°C. However, since the extruder is not an extruder where the screw compression part is of double flight type, a film wherein the two kinds of polyesters are present in a dispersion state of a “crude mixture” is not formed and a film having a half value width of recrystallization peak cannot be produced. (*See, e.g.*, specification, page 13, lines 21-29.)

Therefore, Majima does not disclose, either explicitly or inherently, a film showing “a half value width of recrystallization peak obtained by a differential scanning calorimeter (DSC) by lowering temperature of not more than 0.25” as recited in claim 1.

For at least the foregoing reasons, claim 1 is patentable over the cited reference, and claims 2-6 are patentable by virtue of their dependence from claim 1. Accordingly, withdrawal of the rejection of claims 1-6 is hereby solicited.

In view of the above remarks, Applicants submit that that the claims are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants’ undersigned attorney to arrange for an interview to expedite the disposition of this case.

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If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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AGM/adb
Enclosures: Marked-up copy of Amended Table 2
Clean copy of Amended Table 2

Marked-Up Copy of
Table 2

Table 2

	η_{sp}/c	TmL (°C)	TmH (°C)	Tc2 (°C)	Half value width	Whitening		Hardness	Can formability
						280°C	290°C		
Example 1	0.94	221	252	191	0.19	⊙	⊙	3H	⊙
Example 2	0.95	221	254	195	0.18	⊙	⊙	3H	⊙
Comp. Ex. 1	0.79	223	247	179	0.31	×	×	HB	⊙
Example 3	0.84	222	249	184	0.24	⊙	×	2H	⊙
Comp. Ex. 2	0.88	223	252	176	0.39	×	×	H	⊙
Example 4	0.88	231	250	186	0.22	⊙	Δ	2H	⊙
Example 5	0.93	221	253	191	0.19	⊙	⊙	3H	⊙
Comp. Ex. 3	0.75	Not seen	251	166	0.41	×	×	HB	⊙
Comp. Ex. 4	0.79	220	250	179	0.32	Δ	×	H	⊙
Comp. Ex. 5	0.82	218	250	175	0.37	×	×	2H	⊙
Example 7	0.83	220	251	197	0.12	⊙	⊙	3H	⊙
Example 8	0.95	219	252	191	0.19	⊙	⊙	2H	⊙
Example 9	0.82	186	250	184	0.23	⊙	×	H	⊙
Example 10	0.88	254	260	183	0.24	⊙	×	3H	⊙
Example 11	0.95	221	253	194	0.18	⊙	⊙	3H	⊙
Comp. Ex. 6	0.71	Not seen	256	199	0.11	⊙	⊙	3H	×
Comp. Ex. 7	0.95	223	Not seen	167	0.31	×	×	3H	⊙
Example 12	0.81	219	249	181	$\frac{0.39}{0.25}$	⊙	×	H	[[⊙]]⊙